



Source: FWS 2001a.

Figure 2-12. Vegetation Classes at Big Oaks NWR

Table 2-7. State of Indiana Endangered Plants

Species Name	Common Name	1999 Status
<i>Crotonopsis elliptica</i>	Elliptical rushfoil	E
<i>Helianthus angustifolius</i>	Narrow-leaved sunflower	E
<i>Hypericum gymnanthum</i>	Clasping St. John's wort	E
<i>Lycopodeiella inundata</i>	Northern bog clubmoss	E
<i>Lygodium palmatum</i>	Climbing fern	E
<i>Najas gracillima</i>	Thread-like naiad	E
<i>Panicum scoparium</i>	Broom panic-grass	E
<i>Rhexia mariana</i> var. <i>mariana</i>	Maryland meadow beauty	E
<i>Scirpus purshianus</i>	Weakstalk bulrush	E
<i>Asplenium ruta-muraria</i>	Wall-rue spleenwort	T
<i>Oenothera perennis</i>	Small sundrops	T
<i>Strophostyles leiosperma</i>	Slick seed wild-bean	T
<i>Lycopodium obscurum</i>	Tree clubmoss	R
<i>Oxalis illinoensis</i>	Illinois woodsorrel	R
<i>Poa wolfii</i>	Wolf bluegrass	R
<i>Sagittaria autralis</i>	Longbeak arrowhead	R
<i>Waldsteinia fragarioides</i>	Barren strawberry	R
<i>Woodwardia areolata</i>	Nettled chain-fern	R
<i>Aesculus octandra</i>	Yellow buckeye	WL
<i>Agalinis fasciculata</i>	Clustered foxglove	WL
<i>Andropogon ternarius</i>	Silver bluestem	WL
<i>Antennaria solitaria</i> *	Single-headed pussytoes	WL
<i>Bartonia paniculata</i>	Twining bartonia	WL
<i>Botrychium bitermatum</i>	Sparse-lobed grape fern	WL
<i>Botrychium oneidense</i>	Blunt-lobed grape fern	WL
<i>Carex abscondita</i>	Thicket sedge	WL
<i>Carex louisianica</i>	Louisiana sedge	WL
<i>Carex woodii</i>	Pretty sedge	WL
<i>Chimaphila maculata</i>	Spotted wintergreen	WL
<i>Cimicifuga racemosa</i>	Black bugbane	WL
<i>Dentaria diphylla</i>	Crinkleroot	WL
<i>Eupatorium rotundifolium</i>	Round-leaved boneset	WL
<i>Hydrastis canadensis</i>	Goldenseal	WL
<i>Linum striatum</i>	Ridged yellow flax	WL
<i>Lycopodium clavatum</i>	Running pine	WL
<i>Monotropa hypopithes</i>	American pinesap	WL
<i>Panax quinquefolium</i>	American ginseng	WL
<i>Panax trifolium</i>	Dwarf ginseng	WL
<i>Platanthera lacera</i>	Green-fringed orchis	WL
<i>Platanthera peramoena</i>	Purple fringeless orchis	WL
<i>Salix caroliniana</i>	Carolina willow	WL
<i>Scleria pauciflora</i>	Fewflower nutrush	WL
<i>Spiranthes ovalis</i>	Lesser ladies'-tresses	WL
<i>Spiranthes tuberosa</i>	Little ladies'-tresses	WL
<i>Veratrum woodii</i>	False hellebore	WL
<i>Viola blanda</i>	Smooth white violet	WL

Source: IDNR 1999.

Notes:

*Tentative identification.

E = State of Indiana Endangered.

R = State of Indiana Rare.

T = State of Indiana Threatened.

WL = State of Indiana Watch List.

No threatened or endangered species were found federally or in Carroll or Trimble Counties, Kentucky.

2.8.3 Wildlife

JPG provides quality habitat for a variety of terrestrial and aquatic species. Forty-one species of fish, 8 species of freshwater mussels, 24 species of amphibians, and 18 species of reptiles have been found on the installation. Mammal species include white-tail deer, raccoon, coyote, opossum, gray and fox squirrel, skunk, beaver, red fox, weasel, and mink. Large populations of small mammals, including mice and moles, attract significant numbers of reptiles and raptors. JPG is approximately 80% reforested, and the unbroken stands of mature and young trees are used by migrating neo-tropical birds. More than 100 breeding birds have been recorded at the installation. The American Bird Conservancy has listed the Big Oaks NWR as a Globally Important Bird Area because of its importance to grassland birds (e.g., Henslow's sparrow) and forest birds (e.g., cerulean warbler). The FWS and the Institute for Bird Populations are conducting ongoing census surveys of wildlife at the installation. Wildlife management continues even with the JPG's closure in September 1995. Twenty-five river otters were released in February 1996 at the Old Timbers Lake in support of Indiana's Otter Restoration Program (SAIC 1997a).

JPG provides habitat for a wide variety of game animals and fish that are harvested on the installation. Some stocking of game birds, fish, and other creatures has been accomplished to maintain stable populations of some species. Hunting is allowed on approximately 27,700 acres (112 km²). The remaining area, approximately 27,300 acres (110 km²), provides habitat for small game; however, this land is closed to hunters because of the presence and hazards of UXO and DU. The staff of the Big Oaks NWR manage the hunting program at JPG (FWS 2001b).

White-tailed deer and wild turkey hunting is permitted in designated areas administered by the FWS as part of the Big Oaks NWR (FWS 2001b). Mammals and fowl harvested on JPG include white-tail deer, fox squirrel, eastern gray squirrel, eastern cottontail rabbit, and wild turkey. Approximately 400 to 500 whitetail deer are harvested annually (FWS 2001b). The wild turkey harvest averages 50 birds per year (MWH 2002). Permit drawn hunts for the general public have been conducted for deer since the 1960s and for turkey since 1984. Fish harvested on JPG include bass, bluegill, sunfish, crappie, and catfish.

There are 11 federally endangered animals (3 birds, 1 mammal, and 7 mollusks) that may occur within the boundaries of JPG. The three bird species are transients that may be present during migration, including the Piping plover (*Charadrius melodus*), Kirtland's warbler (*Dendroica kirtlandi*), and interior least tern (*Sterna antillarum athalassos*). The Indiana bat (*Myotis sodalis*) also has been documented at JPG (Rust E&I 1998). The white catspaw (*Epioblasma obliquata perobliqua*), northern riffleshell (*Epioblasma torulosa rangiana*), tubercled blossom (*Epioblasma torulosa torulosa*), pink mucket (*Lampsilis abrupta*), ring pink (*Obovaria refusa*), orange-foot pimpleback (*Plethobasus cooperianus*), and fat pocketbook (*Potamilus capax*) are all federally endangered mollusks. The bald eagle (*Haliaeetus leucocephalus*) is the only federally threatened animal (IDNR 2001b). Table 2-8 identifies Federal, State of Indiana, and Carroll and Trimble Counties, Kentucky, endangered species.

In addition to the 11 federally endangered species, 9 State of Indiana-endangered species (6 birds, 2 mammals, and 1 reptile) and 2 Carroll and Trimble County, Kentucky, endangered species (2 mollusks) also have been identified. Additionally, Henslow's sparrow (*Ammodramus henslowii*) has been identified as a breeding species at JPG. Ten species in Indiana and five species in Kentucky are listed as species of special concern (IDNR 2001b; KSNPC 2001).

2.9 NOISE

Prior to closure in 1995, JPG conducted operations in accordance with an Installation Compatible Use Zone program based on a 1983 environmental noise assessment to quantify major noise sources.

Table 2-8. Federal and State Endangered Species

Species Type	Species Name	Common Name	Status
Bird	<i>Charadrius melodus</i>	Piping plover	FE
Bird	<i>Dendroica kirtlandii</i>	Kirtland's warbler	FE
Bird	<i>Sterna antillarum athalassos</i>	Interior least tern	FE, INE
Mollusk	<i>Epioblasma obliquata perobliqua</i>	White catspaw	FE
Mollusk	<i>Epioblasma torulosa rangiana</i>	Northern riffleshell	FE
Mollusk	<i>Epioblasma torulosa torulosa</i>	Tubercled blossom	FE
Mollusk	<i>Lampsilis abrupta</i>	Pink mucket	FE, KYE
Mollusk	<i>Obovaria retusa</i>	Ring pink	FE, KYE
Mollusk	<i>Plethobasus cooperianus</i>	Orangefoot pimpleback	FE, KYE
Mollusk	<i>Potamilus capax</i>	Fat pocketbook	FE, INE
Mammal	<i>Myotis sodalis</i>	Indiana bat	FE, INE
Bird	<i>Haliaeetus leucocephalus</i>	Bald eagle	FT
Bird	<i>Aimophila aestivalis</i>	Bachman's sparrow	INE
Bird	<i>Ammodramus henslowii</i>	Henslow's sparrow	INE
Bird	<i>Asio flammeus</i>	Short-eared owl	INE
Bird	<i>Circus cyaneus</i>	Northern harrier	INE
Bird	<i>Falco peregrinus</i>	Peregrine falcon	INE
Bird	<i>Tyto alba</i>	Barn owl	INE, KYSC
Mammal	<i>Lutra Canadensis</i>	River otter	INE
Mammal	<i>Lynx rufus</i>	Bobcat	INE
Mammal	<i>Nycticeius humeralis</i>	Evening bat	INE
Mammal	<i>Taxidea taxus</i>	American badger	INE
Reptile	<i>Clonophis kirtlandii</i>	Kirtland's snake	INE
Mollusk	<i>Lampsilis ovata</i>	Pocketbook	KYE
Mollusk	<i>Pleurobema pyramindatum</i>	Pyramid pigtoe	KYE
Bird	<i>Ixobrychus exilis</i>	Least bittern	KYT
Mollusk	<i>Simpsonaias ambigua</i>	Salamander mussel	KYT
Amphibian	<i>Necturus maculosus</i>	Mudpuppy	INSC
Bird	<i>Accipiter striatus</i>	Sharp-shinned hawk	INSC
Bird	<i>Buteo lineatus</i>	Red-shouldered hawk	INSC
Bird	<i>Buteo platypterus</i>	Broad-winged hawk	INSC
Bird	<i>Dendroica cerulea</i>	Cerulean warbler	INSC
Bird	<i>Helminthos vermivorus</i>	Worm-eating warbler	INSC
Bird	<i>Mniotilta varia</i>	Black-and-white warbler	INSC
Bird	<i>Wilsonia citrina</i>	Hooded warbler	INSC
Mammal	<i>Condylura cristata</i>	Star-nosed mole	INSC
Mammal	<i>Mustela nivalis</i>	Least weasel	INSC
Amphibian	<i>Rana Pipiens</i>	Northern Leopard Frog	KYSC
Bird	<i>Ardea herodias</i>	Great Blue Heron	KYSC
Bird	<i>Riparia riparia</i>	Bank swallow	KYSC
Mollusk	<i>Plethobasus cyphus</i>	Sheepnose	KYSC

Sources: IDNR 2001a and KSNPC 2001.

FE = Federally Endangered

FT = Federally Threatened

INE = Indiana Endangered

INSC = Indiana Special Concern

KYE = Carroll and/or Trimble County, Kentucky Endangered

KYSC = Carroll and/or Trimble County, Kentucky Special Concern